

WHAT IS CLAIMED IS:

1. A portable terminal for displaying data on a screen, the portable terminal comprising:
 - 5 a video processor for converting the data into a displayable format according to characteristics and size of the screen so that the data can be displayed on the screen;
 - a sensing device for sensing rotation of the screen, the sensing device generating a sensing signal according to a rotating direction of the screen; and
 - 10 a controller for determining the rotating direction of the screen according to the sensing signal, and controlling the video processor to convert a format of the data in an opposite direction of the determined rotating direction in order to display the data in an upright direction.
- 15 2. The portable terminal of claim 1, wherein the sensing device generates different sensing signals for first to fourth directions, each representing rotating directions of the screen.
3. The portable terminal of claim 2, wherein a rotation angle of the
20 first direction is 0° , a rotation angle of the second direction is 90° , a rotation angle of the third direction is 180° , and a rotation angle of the fourth direction is 270° .
4. The portable terminal of claim 3, wherein the controller determines one of the first to fourth directions to be the rotation angle according to the sensing
25 signal.

5. The portable terminal of claim 4, further comprising a memory for storing a lookup table of coordinate values, wherein the coordinate values are based on predetermined rotating directions of the screen and corresponding to different sensing signals for each of first to fourth directions.

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6. The portable terminal of claim 5, further comprising a key input module for selecting an automatic display mode for displaying the data in the upright direction regardless of the rotating direction of the screen, or a manual display mode for displaying the data in a normal direction regardless of the rotating
10 direction of the screen;

wherein the controller accesses the coordinate values of the lookup table and orders the video processor to convert the displayable format of the data to display the data in an upright direction when in the automatic display mode; and the controller orders the video processor to output the data without converting the
15 format of the data regardless of the rotating direction of the screen when in the manual display mode.

7. The portable terminal of claim 1, wherein the sensing device comprises:

20 a sensing body;

a liquid guide chamber provided within the sensing body;

a plurality of sensing terminals mounted on the sensing body, wherein the sensing terminals are exposed to an inner surface of the sensing body; and

conductive liquid contained in the liquid guide chamber by a predetermined
25 amount, wherein when the portable terminal is rotated, the conductive liquid flows in a direction of gravity to connect a particular sensing terminal to another sensing terminal thereby creating a conductive path for generating the sensing signal;

wherein the controller determines a rotating direction of the screen depending on the sensing signal output from the sensing terminals connected by the conductive liquid.

5 8. The portable terminal of claim 7, wherein the sensing device further comprises at least one buffering chamber provided to an end of the sensing body, for buffering an abrupt change in the flow of the conductive liquid.

 9. The portable terminal of claim 7, wherein the sensing device further
10 comprises two spherical buffering chambers formed at opposite ends of the sensing body.

 10. The portable terminal of claim 7, wherein the plurality of sensing terminals comprise:
15 a first sensing terminal mounted in a particular position of the sensing body;
 a second sensing terminal spaced apart from the first sensing terminal with the liquid guide chamber intervening therebetween;
 a third sensing terminal spaced apart from the first sensing terminal along a length of the sensing body; and
20 a fourth sensing terminal spaced apart from the third sensing terminal with the liquid guide chamber intervening therebetween.

 11. The portable terminal of claim 1, wherein the sensing device includes a first direction sensing element mounted in a top-to bottom direction and a
25 second direction sensing element mounted in a transverse direction of the screen.

12. The portable terminal of claim 5, wherein the video processor converts the displayable format of the data by converting coordinate values of the lookup table according to a rotating direction of the screen under the control of the controller.

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13. A method for displaying data in a portable terminal with a screen for displaying the data, the method comprising the steps of:

- a) generating a sensing signal upon rotation of the screen;
- b) determining a rotating direction of the screen depending on the sensing
10 signal;
- c) converting a format of the data in an opposite direction of the rotating direction of the screen; and
- d) displaying the format-converted data on the screen in an upright direction.

14. The method of claim 13, wherein step a) further comprises generating different sensing signals for first to fourth directions, each representing rotating directions of the screen.

15. The method of claim 14, wherein a rotation angle of the first
20 direction is 0° , a rotation angle of the second direction is 90° , a rotation angle of the third direction is 180° , and a rotation angle of the fourth direction is 270° .

16. The method of claim 15, wherein step b) further comprises determining any one of the first to fourth directions to be the rotating direction
25 according to the sensing signal.

17. The method of claim 16, wherein step b) further comprises determining a rotating direction of the screen according to the sensing signal based on a lookup table.

5 18. The method of claim 17, further comprising selecting an automatic display mode for displaying the data in the upright direction regardless of the rotating direction of the screen, or a manual display mode for displaying the data in a normal direction regardless of the rotating direction of the screen.

10 19. The method of claim 13, wherein step c) further comprises converting a format of the data according to the rotating direction of the screen by converting coordinate values of the data.